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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/822,368

04/12/2004

Jennifer Elizabeth Dobmeier

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29602

7590

11/26/2007

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EXAMINER

DÁY, HERNG DER

ART UNIT

PAPER NUMBER

2128

MAIL DATE

DELIVERY MODE

11/26/2007

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

## Office Action Summary

**Application No.**

10/822,368

**Applicant(s)**

DOBMEIER ET AL.

**Examiner**

Herng-der Day

**Art Unit**

2128

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 10 September 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-21 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-21 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 12 April 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☐ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_\_
- ☐ Notice of Informal Patent Application
- ☐ Other: \_\_\_\_\_

### **DETAILED ACTION**

1. This communication is in response to Applicants' Amendment ("Amendment") to Office Action dated June 20, 2007, filed September 10, 2007.

1-1. Claims 1, 3, 11, 13-15, and 21 have been amended. Claims 1-21 are pending.

1-2. Claims 1-21 have been examined and rejected.

#### ***Specification***

2. Applicants should use the metric (S.I.) units followed by the equivalent English units when describing the inventions in the specifications of patent applications. See MPEP 608.01(IV).

#### ***Claim Objections***

3. It appears that "wherein one of the components comprise glass fiber" as described in line 4 of claim 1 should be "wherein one of the components comprises glass fiber". Appropriate correction is required.

#### ***Claim Rejections - 35 USC § 112***

4. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

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5. Claims 1-10 and 21 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

5-1. Claim 1 recites the limitation, "selecting components for the mat" at line 11 of the claim. However, in the "selecting various physical characteristics" step, the components to be included in the mat were already known.

5-2. Claim 21 recites the limitation, "selecting components for the mat" at line 14 of the claim. However, in the "selecting physical characteristics" step, the components to be included in the mat were already known.

5-3. Claims not specifically rejected above are rejected as being dependent on a rejected claim.

### ***Recommendations***

6. Claim 1 recites the limitation, "the physical characteristics" in lines 8 and 10 of the claim. For clarification purposes, the Examiner suggests that "the physical characteristics" be replaced with "the selected physical characteristics".

7. Claim 21 recites the limitations, "the empirical data" in line 11 of the claim and "the physical characteristics" in lines 11 and 13 of the claim. For clarification purposes, the Examiner suggests that "the empirical data" be replaced with "the empirical performance data" and "the physical characteristics" be replaced with "the selected physical characteristics".

***Claim Rejections - 35 USC § 103***

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

9. Claims 1, 2, and 5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Thomas et al., U.S. Patent Application Publication No. 2003/0022583 A1 published January 30, 2003, in view of Cordova et al., U.S. Patent 5,343,796 issued September 6, 1994.

9-1. Regarding claim 1, Thomas et al. disclose a method for designing a fibrous non-woven mat production, the method comprising:

selecting various physical characteristics for at least some of the components to be included in the mat (as a function of varying fiber length, paragraph [0093]), [wherein one of the components comprises glass fiber];

obtaining empirical performance data relating to the mat based on the selected physical characteristics (Evaluation of the effects, paragraph [0090]; Two high performance fibers were evaluated. Kevlar 29, ... with lengths of 3 and 4 inches, paragraph [0082]);

developing a prediction equation for a performance characteristic of the mat based on the empirical performance data and the physical characteristics (Develop regression equations, paragraph [0093]);

calculating performance characteristics using the prediction equation, wherein ranges of at least some of the physical characteristics are used in the prediction equation (to predict ballistic resistance as a function of varying fiber length, ..., paragraph [0093]); and

selecting components for the mat based on the calculated performance characteristics (The high modulus fiber blend is advantageous in that the fiber only deformed the  $\frac{3}{4}$  inches prior to stopping the projectile in comparison to the  $2\frac{3}{4}$  inch penetration of the Kevlar, paragraph [0136]).

Thomas et al. fail to expressly disclose wherein one of the components comprises glass fiber. Nevertheless, Thomas et al. suggest the referred fibers can be substituted by any fibers having the desired properties for ballistic resistant purpose.

Cordova et al. disclose an armor system and assert at column 1, lines 58-68, "Ballistic resistant articles such as vests, helmets, hard and soft armor, structural members of helicopters and other military equipment, vehicle panels, briefcases, raincoats and umbrellas containing high strength fibers are known. Fibers conventionally used in these articles include aramid fibers such as poly(p-phenylene terephthalamide), graphite fibers, nylon fibers, ceramic fibers, high strength polyethylene fibers, e.g., SPECTRA.RTM., *glass fibers* and the like. For many applications, such as vests or parts of vests, the fibers are used in a woven or knitted fabric."

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the teachings of Thomas et al. to incorporate the teachings of Cordova et al. to obtain the invention as specified in claim 1 because, as suggested by Thomas et al., the referred fibers can be substituted by any fibers having the desired properties for ballistic resistant purpose and, as asserted by Cordova et al., glass fibers are conventionally used in the ballistic resistant articles.

**9-2.** Regarding claim 2, Thomas et al. further disclose wherein the empirical performance data is selected from a group consisting of tear strength, tensile strength and dispersion (Strain wave

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velocity is the speed at which a fiber or structure can absorb and disperse strain energy, paragraph [0061]).

**9-3.** Regarding claim 5, Thomas et al. further disclose wherein the prediction equation is developed using a regression analysis (Develop regression equations, paragraph [0093]).

**10.** Claims 3-4 and 6-10 are rejected under 35 U.S.C. 103(a) as being unpatentable over the combined teachings of Thomas et al., U.S. Patent Application Publication No. 2003/0022583 A1 published January 30, 2003, and Cordova et al., U.S. Patent 5,343,796 issued September 6, 1994, as applied to claim 1, in view of Kajander, U.S. Patent 5,837,620 issued November 17, 1998.

**10-1.** Regarding claims 3-4 and 6-10, Thomas et al. fail to expressly disclose wherein the components comprise binder content and details of glass fiber and binder content. Nevertheless, Thomas et al. suggest the referred fibers can be substituted by any fibers having the desired properties for ballistic resistant purpose.

Kajander discloses a fiber glass mat and suggests at the first paragraph of the detailed description of the invention, "Mats of the present invention contain about 25-75 weight percent fibers and about 15-75 percent binder. The majority of the fibers are glass fibers. The glass fibers which can be used to make mats can have various fiber diameters and lengths dependent on the strength and other properties desired in the mat as is well known. It is preferred that the majority of the glass fibers have diameters in the range of less than 1 up to 23 microns or higher, with the major portion of the fiber being preferably in the range of about 6 to 19 microns and most preferably in the range of about 8 to 16 microns. ... Normally the glass fibers used all have about the same target length, such as 0.25, 0.5, 0.75, 1 or 1.25 inch, but fibers of different lengths and different average diameters can also be used to get different characteristics in a

known manner. ... Generally the longer the fiber, the higher the tensile and tear strengths of the mat, but the poorer the fiber dispersion.”

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the combined teachings of Thomas et al. and Cordova et al. to incorporate the teachings of Kajander to obtain the invention as specified in claims 3-4 and 6-10 because, as suggested by Kajander, the glass fibers which can be used to make mats can have various fiber diameters and lengths dependent on the strength and other properties desired in the mat as is well known. In other words, for the desired strength and other properties one of ordinary skill would like to use various fiber diameters and lengths as well as binder content.

**11.** Claims 11-13, 19, and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Thomas et al., U.S. Patent Application Publication No. 2003/0022583 A1 published January 30, 2003, in view of Cordova et al., U.S. Patent 5,343,796 issued September 6, 1994.

**11-1.** Regarding claims 11 and 20, Thomas et al. disclose a system for designing a fibrous non-woven mat production, the system comprising:

[a processor] to develop a prediction equation to calculate one or more production component values based on a performance characteristic value (Develop regression equations, paragraph [0093]), wherein the prediction equation is developed from data on a performance characteristic of the mat generated by one or more designed experiments (Evaluation of the effects, paragraph [0090]; Two high performance fibers were evaluated. Kevlar 29, ... with lengths of 3 and 4 inches, paragraph [0082]); and

a mat production design for producing the fibrous non-woven mat [comprising glass fiber], the mat production design comprising one or more of the production component values



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calculated from a desired performance characteristic value input into the prediction equation (to predict ballistic resistance as a function of varying fiber length, ..., paragraph [0093]).

Thomas et al. fail to expressly disclose the fibrous non-woven mat comprising glass fiber. Nevertheless, Thomas et al. suggest the referred fibers can be substituted by any fibers having the desired properties for ballistic resistant purpose.

Cordova et al. disclose an armor system and assert at column 1, lines 58-68, "Ballistic resistant articles such as vests, helmets, hard and soft armor, structural members of helicopters and other military equipment, vehicle panels, briefcases, raincoats and umbrellas containing high strength fibers are known. Fibers conventionally used in these articles include aramid fibers such as poly(p-phenylene terephthalamide), graphite fibers, nylon fibers, ceramic fibers, high strength polyethylene fibers, e.g., SPECTRA.RTM., *glass fibers* and the like. For many applications, such as vests or parts of vests, the fibers are used in a woven or knitted fabric."

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the teachings of Thomas et al. to incorporate the teachings of Cordova et al. because, as suggested by Thomas et al., the referred fibers can be substituted by any fibers having the desired properties for ballistic resistant purpose and, as asserted by Cordova et al., glass fibers are conventionally used in the ballistic resistant articles.

Thomas et al. also fail to expressly disclose using a processor or a computer to develop the prediction equation. Nevertheless, Thomas et al. suggest using regression analysis (paragraphs [0080], [0085], [0093], and [0125]) and statistical design method (paragraph [0097]).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the combined teachings of Thomas et al. and Cordova et al. to use a computer to develop the prediction equation via the suggested regression analysis and statistical design method to obtain the invention as specified in claims 11 and 20 because using computer for regression analysis is much efficient.

**11-2.** Regarding claim 12, Thomas et al. further disclose wherein the performance characteristic is selected from the group consisting of tear strength, tensile strength and dispersion (Strain wave velocity is the speed at which a fiber or structure can absorb and disperse strain energy, paragraph [0061]).

**11-3.** Regarding claim 13, Thomas et al. further disclose wherein the one or more production component values are selected from the group consisting of a materials characteristic and a production characteristic (Two high performance fibers were evaluated. Kevlar 29, ... with lengths of 3 and 4 inches, paragraph [0082]).

**11-4.** Regarding claim 19, Thomas et al. further disclose wherein the prediction equation is developed using a regression analysis (Develop regression equations, paragraph [0093]).

**12.** Claims 14-18 are rejected under 35 U.S.C. 103(a) as being unpatentable over the combined teachings of Thomas et al., U.S. Patent Application Publication No. 2003/0022583 A1 published January 30, 2003, and Cordova et al., U.S. Patent 5,343,796 issued September 6, 1994, as applied to claim 11, in view of Kajander, U.S. Patent 5,837,620 issued November 17, 1998.

**12-1.** Regarding claims 14-18, Thomas et al. fail to expressly disclose wherein the mat comprise binder content and details of glass fiber and binder content. Nevertheless, Thomas et

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al. suggest the referred fibers can be substituted by any fibers having the desired properties for ballistic resistant purpose.

Kajander discloses a fiber glass mat and suggests at the first paragraph of the detailed description of the invention, "Mats of the present invention contain about 25-75 weight percent fibers and about 15-75 percent binder. The majority of the fibers are glass fibers. The glass fibers which can be used to make mats can have various fiber diameters and lengths dependent on the strength and other properties desired in the mat as is well known. It is preferred that the majority of the glass fibers have diameters in the range of less than 1 up to 23 microns or higher, with the major portion of the fiber being preferably in the range of about 6 to 19 microns and most preferably in the range of about 8 to 16 microns. ... Normally the glass fibers used all have about the same target length, such as 0.25, 0.5, 0.75, 1 or 1.25 inch, but fibers of different lengths and different average diameters can also be used to get different characteristics in a known manner. ... Generally the longer the fiber, the higher the tensile and tear strengths of the mat, but the poorer the fiber dispersion."

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the combined teachings of Thomas et al. and Cordova et al. to incorporate the teachings of Kajander to obtain the invention as specified in claims 13-18 because, as suggested by Kajander, the glass fibers which can be used to make mats can have various fiber diameters and lengths dependent on the strength and other properties desired in the mat as is well known. In other words, for the desired strength and other properties one of ordinary skill would like to use various fiber diameters and lengths as well as binder content.

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**13.** Claim 21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Thomas et al., U.S. Patent Application Publication No. 2003/0022583 A1 published January 30, 2003, in view of Cordova et al., U.S. Patent 5,343,796 issued September 6, 1994, and further in view of Kajander, U.S. Patent 5,837,620 issued November 17, 1998.

**13-1.** Regarding claim 21, Thomas et al. disclose a method for designing a fibrous non-woven mat production, the method comprising:

selecting physical characteristics for at least some components to be included in the mat (as a function of varying fiber length, paragraph [0093]), [wherein the components include glass fibers and binder, and wherein the physical characteristics include length and diameters of the glass fiber and content, by percentage weight, of the binder];

obtaining empirical performance data relating to the mat based on the selected physical characteristics (Evaluation of the effects, paragraph [0090]; Two high performance fibers were evaluated. Kevlar 29, ... with lengths of 3 and 4 inches, paragraph [0082]), wherein the empirical performance data is selected from the group consisting of tear strength, tensile strength and dispersion (Strain wave velocity is the speed at which a fiber or structure can absorb and disperse strain energy, paragraph [0061]);

developing a prediction equation for a performance characteristic of the mat based on the empirical data and the physical characteristics (Develop regression equations, paragraph [0093]);

calculating performance characteristics using the prediction equation, wherein ranges of at least some of the physical characteristics are used in the prediction equation (to predict ballistic resistance as a function of varying fiber length, ..., paragraph [0093]); and

selecting components for the mat based on the calculated performance characteristics (The high modulus fiber blend is advantageous in that the fiber only deformed the  $\frac{3}{4}$  inches prior to stopping the projectile in comparison to the  $2\frac{3}{4}$  inch penetration of the Kevlar, paragraph [0136]).

Thomas et al. fail to expressly disclose wherein the components include glass fibers. Nevertheless, Thomas et al. suggest the referred fibers can be substituted by any fibers having the desired properties for ballistic resistant purpose.

Cordova et al. disclose an armor system and assert at column 1, lines 58-68, "Ballistic resistant articles such as vests, helmets, hard and soft armor, structural members of helicopters and other military equipment, vehicle panels, briefcases, raincoats and umbrellas containing high strength fibers are known. Fibers conventionally used in these articles include aramid fibers such as poly(p-phenylene terephthalamide), graphite fibers, nylon fibers, ceramic fibers, high strength polyethylene fibers, e.g., SPECTRA.RTM., *glass fibers* and the like. For many applications, such as vests or parts of vests, the fibers are used in a woven or knitted fabric."

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the teachings of Thomas et al. to incorporate the teachings of Cordova et al. because, as suggested by Thomas et al., the referred fibers can be substituted by any fibers having the desired properties for ballistic resistant purpose and, as asserted by Cordova et al., glass fibers are conventionally used in the ballistic resistant articles.

Thomas et al. also fail to expressly disclose wherein the components include binder, and wherein the physical characteristics include length and diameters of the glass fiber and content, by percentage weight, of the binder.

Kajander discloses a fiber glass mat and suggests at the first paragraph of the detailed description of the invention, "Mats of the present invention contain about 25-75 weight percent fibers and about 15-75 percent binder. The majority of the fibers are glass fibers. The glass fibers which can be used to make mats can have various fiber diameters and lengths dependent on the strength and other properties desired in the mat as is well known. It is preferred that the majority of the glass fibers have diameters in the range of less than 1 up to 23 microns or higher, with the major portion of the fiber being preferably in the range of about 6 to 19 microns and most preferably in the range of about 8 to 16 microns. ... Normally the glass fibers used all have about the same target length, such as 0.25, 0.5, 0.75, 1 or 1.25 inch, but fibers of different lengths and different average diameters can also be used to get different characteristics in a known manner. ... Generally the longer the fiber, the higher the tensile and tear strengths of the mat, but the poorer the fiber dispersion."

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the combined teachings of Thomas et al. and Cordova et al. to incorporate the teachings of Kajander to obtain the invention as specified in claim 21 because, as suggested by Kajander, the glass fibers which can be used to make mats can have various fiber diameters and lengths dependent on the strength and other properties desired in the mat as is well known. In other words, for the desired strength and other properties one of ordinary skill would like to use various fiber diameters and lengths as well as binder content.

#### ***Applicants' Arguments***

14. Applicants argue the following:

**14-1. The Rejection under 112, second paragraph**

(1) "Claims 1 and 21 have been amended to replace "the selected physical properties" at lines 5-6 with the selected physical characteristics, to provide proper antecedent basis for this element. Claim 11 has been amended to clarify that the one or more production values at line 7 is referring to "one or more production component values."" (Page 7, paragraph 4, Amendment)

(2) "The Applicants note that selecting physical characteristics to be studied for a component (e.g., fiber length) does not mean that the component itself (e.g., a fiber of a specific length) has been selected. Thus, the components of the mat may not already be known when they are selected based on the calculated performance characteristics." (Page 8, paragraph 1, Amendment)

**14-2. The Rejection under 102(b)**

(3) "The rejection of Claims 1, 2 and 5 under § 102(b) over Thomas is made moot by the amendment to Claim 1, which notes that one of the components of the fibrous non-woven mat is glass fiber." (Page 8, paragraph 2, Amendment)

**14-3. The Rejection under 103(a)**

(4) "The rejection of Claims 11-13, 19 and 20 under § 103(a) over Thomas is made moot by the Amendment to Claim 11, which specifies that the mat production design is for producing the fibrous non-woven mat comprising glass fiber." (Page 8, paragraph 3, Amendment)

(5) "The rejection of Claims 3-4, 6-10, 14-18 and 21 under § 103(a) over Thomas in view of Kajander is respectfully traversed for a similar reason." (Page 9, paragraph 1, Amendment)

***Response to Arguments***

**15.** Applicants' arguments have been fully considered.

**15-1.** Applicants' argument (1) is persuasive. The rejections of claims 11-20 under 35 U.S.C. 112, second paragraph, in Office Action dated June 20, 2007, have been withdrawn.

**15-2.** Applicants' argument (2) is not persuasive. The component recited in claim 1, for example, "wherein one of the components comprises glass fiber" as recited in line 4 of claim 1 or "wherein one of the components comprises a binder" as recited in line 1-2 of claim 4, is glass fiber or binder, which is different from Applicants' argument of the component itself, "e.g., a fiber of a specific length".

**15-3.** Applicants' arguments (3)-(5) are moot in view of the new ground(s) of rejection as detailed in paragraphs 9 to 13-1 above. The rejections of claims 1-21 under 35 U.S.C. 102(b)/103(a) in Office Action dated June 20, 2007, have been withdrawn.

***Conclusion***

**16.** Applicants' amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a).

Applicants are reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be



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calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

17. Any inquiry concerning this communication or earlier communications from the Examiner should be directed to Herng-der Day whose telephone number is (571) 272-3777. The Examiner can normally be reached on 9:00 - 17:30.

Any inquiry of a general nature or relating to the status of this application should be directed to the TC 2100 Group receptionist: (571) 272-2100.

If attempts to reach the Examiner by telephone are unsuccessful, the Examiner's supervisor, Kamini S. Shah can be reached on (571) 272-2279. The fax phone numbers for the organization where this application or proceeding is assigned is (571) 273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Herng-der Day  
November 20, 2007

*H.D.*

  
KAMINI SHAH  
SUPERVISORY PATENT EXAMINER